March 16, 2001
Forest Health Assessment

Forest Health considerations for the Lake Whatcom Planning Area
Karen Ripley, Forest Entomologist and Forest Health Program Manager
September 30, 1996
(Reviewed February 15, 2001 by Jeff Moore, Research Technician III)

Forest health is Aa condition where biotic and abiotic influences on forests do not threaten management objectives now or in the future.@ The most serious forest health problems occur when natural forest dynamics are upset and tree resilience is decreased, allowing damage agents to flourish. Forest health targeted activities are undertaken when insects, disease, adverse weather, or other damage agents are expected to unacceptably impact the management objectives for a specific site or area and a net benefit could be achieved by using targeted forest health practices. Forest health practices include harvest, thinning, salvage, slash treatment, revegetation with more desirable species, hazardous tree removal, and pesticide application.

The major forest health problems observed or expected to occur in the Lake Whatcom area include insects (Douglas-fir beetle, balsam woolly adelgid, hemlock looper, Douglas-fir pole beetle), animals (bear, mountain beaver), disease (root diseases, needle cast), and weather (water, wind, winter damage, and drought). Hazardous trees, those likely to fall and damage valuable targets, are also a forest health consideration. None of these problems currently imminently threatens the watershed as a whole. Some may currently be significant problems on specific sites.

All of these forest health problems are favored or impeded by specific forest structures which can be prevented or mitigated or eliminated through standard forest management practices. For example, the Douglas-fir beetle breeds in freshly fallen logs. If a large quantity of fresh logs is available, such as after a major windstorm, the insects breed easily. When they emerge the following year, high beetle populations are capable of attacking and killing large, healthy Douglas-fir trees. Rapid salvage of large quantities of freshly fallen Douglas-fir logs is desirable to recover the value of the logs plus prevent beetle population build-up and additional damage to living trees. In portions of the watershed where more coarse woody debris is desired, a more contemplative approach may be taken. Smaller quantities of blowdown might be left in place and monitored closely; logs might be salvaged only if high beetle populations were observed to be developing; a Douglas-fir beetle anti-aggregant pheromone might be applied to keep the beetles away from the logs. The choice of silvicultural tool (salvage, partial or delayed salvage, monitoring, pheromone treatment) depends on the management objectives for the area, the degree to which those objectives are threatened by the specific problem, and the cost of

implementing alternative silvicultural measures. Some forest health oriented silvicultural treatments, such as urgent salvage, could temporarily disrupt short term harvest plans.
When creating a management plan for an area, it is not appropriate to define the acceptable range of silvicultural activities when the problem and it=s specific impacts aren=t known. This is best illustrated with the example of accidental introduction of exotic pests. Due to proximity to the Ports of Bellingham and Vancouver, B.C., it is not unlikely that future detections of exotic forest pests could occur in the Lake Whatcom area. Residents and forest managers must be prepared to learn about the specific risks posed by an individual pest species, risks which may extend far beyond the boundaries of this watershed. If pest risk is sufficiently grave, they may need to be responsive and agreeable to control methods such as aerial spraying of chemical or biological pesticide or removal of susceptible host plants. Extraordinary management efforts and precautions may be necessary and wise in the circumstance of exotic pest introduction. In these cases, as with more normal situations, all forest management activities will meet or exceed EPA guidelines, Washington State Department of Agriculture regulations, and Forest Practice laws. They will be designed to most effectively address the specific problem and site conditions while maintaining safety and environmental quality.